Fibroma in a Wistar Laboratory Rat – A Case Report

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ABSTRACT

Laboratory rats can occasionally develop fibromas. This case study reports on a fibroma in an 18-month-old female Wistar rat observed during routine examination at Mass Biotech, Chengalpet, Tamil Nadu. After necropsy, a noticeable subcutaneous abdominal lump was found, showing a well-encapsulated mass the size of a lemon (8 cm in diameter), which was removed. The diagnosis of fibroma was confirmed by histology.

Keywords: Wistar rat, Fibroma

INTRODUCTION

In laboratory rats, one of the common tumours is Fibroma. The most common tumours are mammary fibroadenomas, occurring in 36.1% of females and 2.6% of males, while dermal fibromas occurred in 4.5% of males and 3.0% of females (Poteracki and Walsh, 1998). A Wistar rat of 18 months old female was presented with an abnormal swelling near the abdominal region. A well-encapsulated, lemon-sized cyst located subcutaneously on the left side of the abdominal subcutaneous hard and movable mass, with no open wound externally, nearly 8 cm in diameter (Figure 1).

Fig. 1: Gross Appearance of abdominal tumour in rat

Figure 1 shows the gross examination of a rat showing a prominent abdominal mass the size of a lemon. Histopathological examination of the excised tissue revealed (Fig. 2) that the mass was a benign fibroma, characterised by a proliferation of well-differentiated fibroblasts within a collagenous stroma. Tissue consists of a uniform population of loosely arranged spindle-shaped fibroblasts, which are spindle shaped and few cells appearing atypical and similar to strap cells- Red arrow. There is an abundant collagenous matrix with a wavy, fibrous appearance. The nuclei are elongated, bland, and

evenly spaced with fine chromatin and inconspicuous nucleoli. No atypia, mitoses, or signs of malignancy are appreciable. The stroma is moderately vascularized. This is well differentiated Fibroma**.**

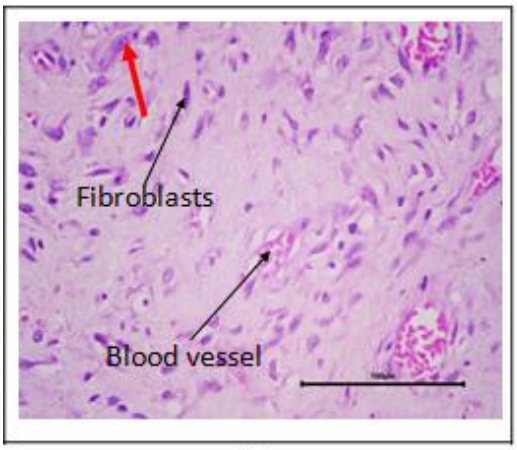

Fig. 2: shows the histopathology findings of the cyst

Fibromas are occasionally seen in untreated rats, but they are rarer in untreated aged mice (Ernst et al., 2001). It is made up of a homogeneous population of normal fibroblasts with minimal mitotic figures and minimal nuclear pleomorphism. There are many mature collagen fibres in the intercellular matrix. Interlacing bundles of spindle cells with a high nuclear-to-cytoplasmic ratio and frequent mitoses are the hallmark of fibrosarcoma. The intercellular matrix is less noticeable here than in the fibroma, even though some collagen synthesis is seen (Solar, 2021). Rat fibromas can grow to significant sizes and, depending on their location and size, can cause discomfort, impair mobility, or result in ulceration, even though they are usually thought to be non-life-threatening (Percy and Barthold, 2008). In rats, a fibroma of desmoid type (also known as fibromatosis-type) has been described as a postoperative lesion in *bhd* gene mutant rats (Kouchi *et al.,* 2008). This form of fibroma may occasionally be seen in conventional strains. Fibromas have also been reported to develop in Wistar rats at the site of repeated injection of low doses of iron dextran solution (Roe and Carter, 1967). A rare benign fibroma in a Wistar rat, confirmed through histopathology, though non-lethal, such tumours can impair mobility and cause complications if untreated. Early detection and differentiation from malignant tumours are essential in laboratory animal care.

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